WETLAND DELINEATION REPORT

for

Annapolis Neck, LLC City of Annapolis, Maryland

Prepared for:

Bay Engineering, Inc. 190 Admiral Cochrane Drive, Suite 175 Annapolis, MD 21401

Prepared by:

Michael J. Klebasko, P.W.S.



8373 Piney Orchard Parkway, Suite 207 Odenton, Maryland 21113 Phone: (410) 672-5990

FAX: (410) 672-5993

1. INTRODUCTION

A wetland delineation in accordance with the methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual¹ and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region² was conducted by Michael J. Klebasko and Kenneth R. Wallis of Klebasko Environmental, LLC on August 3, 2012, on September 5, 2012, and on October 5, 2012. The purpose of the delineation was to identify any wetlands, streams, or other jurisdictional areas that would be regulated by the Maryland Department of the Environment and/or the U.S. Army Corps of Engineers. The limits of potential jurisdictional areas within the study area were flagged in the field with orange colored surveyors tape and numbered consecutively. Three (3) data sheets were also completed documenting the presence or absence of wetlands within the study area. The data sheets are included in Appendix A of this report.

2. EXISTING SITE CONDITIONS

The 5.28-acre property is located south of the intersection of Georgetown Road and Bay Ridge Road in the City of Annapolis, Maryland (Figure 1). The study area is bordered to the west by an existing commercial building, to the south by existing single-family homes along Old Annapolis Neck Road, and to the east by the recently constructed Bay Village Drive. The site currently contains several single family homes, mowed lawn, and a small area of mixed-hardwood forest. The Latitude and Longitude of site are N38° 56' 50" and W76° 29' 22", respectively.

3. ENVIRONMENTAL MAPS

Various environmental maps were reviewed prior to conducting the wetland delineation in order to obtain knowledge on potential site conditions and characteristics. This information is useful in accurately delineating the limits of jurisdictional areas in the field.

a. NRCS Soil Surveys

The U.S. Department of Agriculture - Natural Resources Conservation Service (NRCS) has produced soil surveys for every county within the State of Maryland. The soil surveys map the locations of the various soil types throughout each county and provide a description of each

¹ Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Wetlands Research Program Technical Report Y-87-1. Final Report. January.

² U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*. U.S. Army Engineer Research and Development Center. Vicksburg, MS.

soil type. The updated soil survey for Anne Arundel County (Figure 2) that can be accessed online at http://websoilsurvey.nrcs.usda.gov revealed that four (4) soil types are mapped on the subject property (as summarized in Table 1). One of the soil types has been classified as partially hydric by NRCS.

b. National Wetland Inventory Maps

The National Wetland Inventory (NWI) Maps prepared by the U.S. Department of the Interior - Fish & Wildlife Service used high altitude aerial photography to map the limits of various wetland types³ throughout the United States. The NWI Map for this site (Figure 3) is contained on the Annapolis quadrangle and does not indicate the presence of any mapped wetland classifications on the property.

c. USGS Topographic Maps

The U.S. Geological Survey (USGS) Maps depict existing environmental features on sites, including 20-foot topographic lines, forest, structures, and roads, as well as the locations of ponds, intermittent and perennial streams. The USGS Map for this study area (Figure 4) indicates the site is a mixture of open land and forest. However, no intermittent or perennial streams are mapped on the property.

d. Watershed Classification

Section 26.08.01.08 of the Code of Maryland Regulations lists the stream segment designation for all the waterways within the state of Maryland, as well as the their Use Classifications. Any water leaving this property drains off-site via sheet flow in a southeasterly direction into a recently constructed storm drain inlet adjacent to Bay Village Drive. The water then travels within a storm drain pipe for a distance of approximately 700 feet before emptying into a storm water management pond. Water released through the pond's riser is then conveyed within the storm drain system for an additional 1,000 feet before being ultimately discharged into an unnamed tributary to Lake Ogleton, a Use I Waterway according to CoMar 26.08.02.08.(K).

4. WETLAND DELINEATION PARAMETERS

In order for an area to be classified as a wetland, the following three parameters must exist: (a) a predominance of hydrophytic vegetation; (b) evidence of wetland hydrology; and (c) hydric soils. The data sheets in Appendix A summarize the results of the field investigation.

³ Cowardin, Lewis M., V. Carter, F.C. Golet, and E. T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish & Wildlife Service - Biological Services Program. FWS/OBS-79/31.

a. Hydrophytic Vegetation

By definition, wetlands support a prevalence of vegetation typically adapted for life in saturated soil conditions under normal circumstances. Hydrophytic vegetation is present when the plant community is dominated by species that can tolerate prolonged inundation or soil saturation during the growing season. The wetland indicator status⁴ of the species that make up the plant community is used to determine whether hydrophytic vegetation is dominant. Plant species that are classified as Obligate (OBL), Facultative-wetland (FACW), or Facultative (FAC) are considered to be hydrophytic, while species classified as Facultative-Upland (FACU) and Upland (UPL) are considered to be non-wetland plants.

b. Wetland Hydrology

Wetlands by definition are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The presence of water for an extended period of time at or within 12 inches of the soil surface is the driving force for all wetlands. The *Corps of Engineers Wetlands Delineation Manual* and the *Regional Supplement* list the indicators of wetland hydrology. The indicators are divided into two categories - primary and secondary. One primary indicator is sufficient to conclude that wetland hydrology is present. In the absence of a primary indicator, two or more secondary indicators are required to conclude that wetland hydrology is present.

c. Hydric Soils

A hydric soil is defined as a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions, generally within 12 inches of the soil surface. Within the Coastal Plain of Maryland, hydric soil indicators are listed in the *Regional Supplement*. Either a 4-inch diameter bucket auger or a spade shovel were used to collect soil samples.

5. SUMMARY OF FINDINGS

One non-tidal wetland was identified within the study area, as shown on the enclosed 30-scale Wetland Delineation Plan prepared by Bay Engineering, Inc. The isolated, man-made, non-tidal wetland pocket was identified in a wooded area near the center of the site. This 6,860-square foot wetland pocket appears to have been created when a driveway was constructed along its eastern edge, thus inhibiting drainage. This condition was exacerbated when the small culvert installed under the driveway became blocked, thus preventing run-off from draining out of the depression. The canopy in the wetland is comprised of red maple (Acer rubrum) and sweet gum (Liquidambar styraciflua), while the herbaceous layer is dominated by common greenbriar

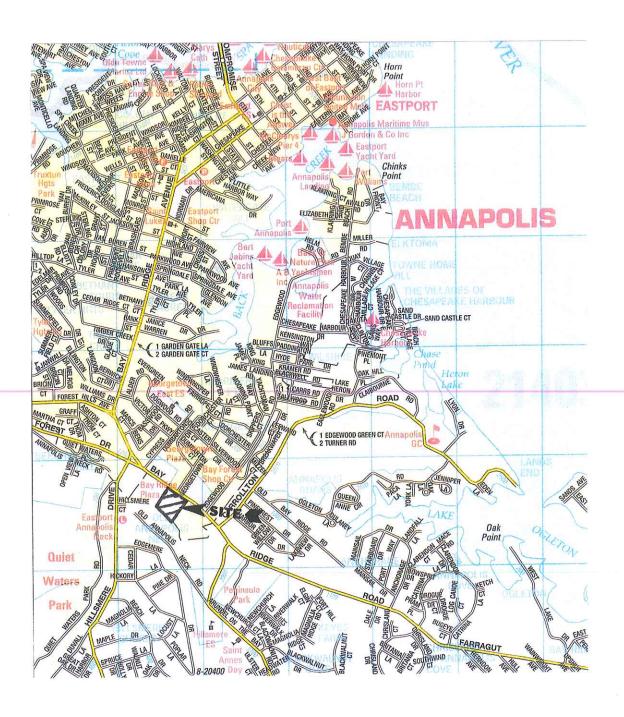
⁴ Reed, P.B., Jr. 1988. *National List of Plant Species that Occur in Wetlands: 1988 National Summary*. Biological Report 88(24), U.S. Fish and Wildlife Service, Washington D.C.

(*Smilax rotundifolia*). Wetland Delineation Data Sheet A (Appendix A) documents the characteristics of this wetland pocket, while Wetland Delineation Data Sheets B and C document the upland conditions to the east and south of the wetland area.

This delineation has been confirmed by Judy Broersma of the Maryland Department of the Environment (MDE). A Letter of Authorization #13-NT-0214/201361023 was subsequently issued by MDE on September 17, 2014 to permanently impact the entire, isolated wetland pocket and its 25-foot buffer.

	TABLE 1: MAPPED SOILS TA	BLE	1
Symbol	Map Unit Name	K-Factor	Hydric
AoC	Annapolis loamy sand, 5-10% slopes	0.20	No
AuB	Annapolis-Urban land complex, 0-5% slopes	0.28	No
CkA	Colemantown fine sandy loam, 0-2% slopes	0.28	Partially
Uz	Urban land	0.28	No

Source: http://websoilsurvey.nrcs.usda.gov (October 1, 2012)





8373 Piney Orchard Parkway, #207 Odenton, Maryland 21113 (410) 672-5990 (office) (410) 672-5993 (fax) Annapolis Neck, LLC Anne Arundel County, MD FIGURE 1 - Vicinity Map (Copyright ADC The Map People Permitted Use #21005228)

Scale: 1" = 2,000'

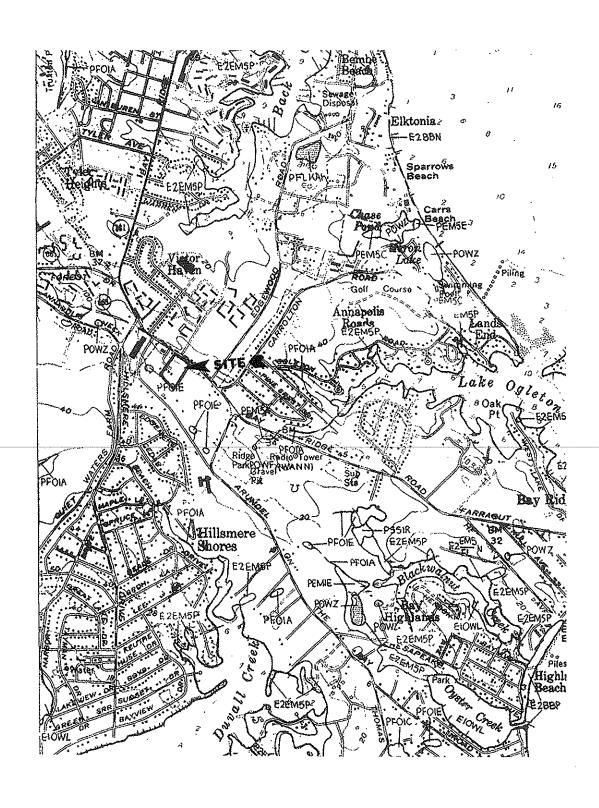




8373 Piney Orchard Parkway, #207 Odenton, Maryland 21113 (410) 672-5990 (office) (410) 672-5993 (fax) Annapolis Neck, LLC Anne Arundel County, MD FIGURE 2 - Soils Map Source:

http://websoilsurvey.nrcs.usda.gov (October 2012)

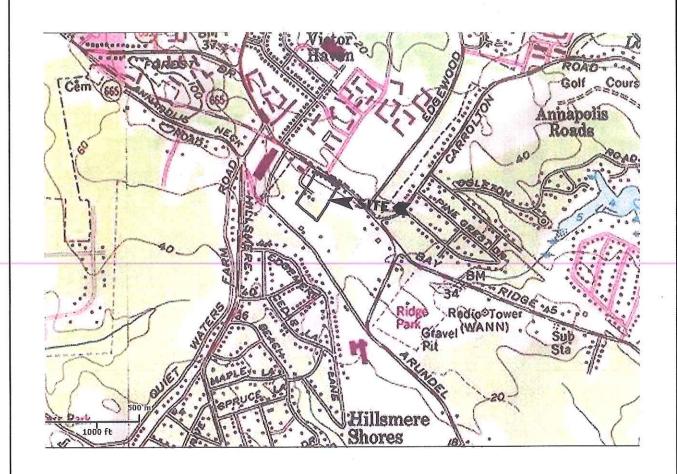
Scale: 1" = 300'



Klebasko Environmental, LLC

8373 Piney Orchard Parkway, #207 Odenton, Maryland 21113 (410) 672-5990 (office) (410) 672-5993 (fax) Annapolis Neck, LLC Anne Arundel County, MD FIGURE 3 - NWI Map (Annapolis Quadrangle)

Scale: 1" = 2,000"





8373 Piney Orchard Parkway, #207 Odenton, Maryland 21113 (410) 672-5990 (office) (410) 672-5993 (fax) **Annapolis Neck, LLC Anne Arundel County, MD**

FIGURE 4 - U.S.G.S. Map (Annapolis Quadrangle)

Scale: N/A

APPENDIX A

WETLAND DETERMINATION DATA FORM - A	
Project/Site: ANNAPOUS NECL, LLC City/County:	ANALADOLIS / A.A. Sampling Date: 10512
Project/Site: //N/O/WOOLS NAME / Colly/County.	State: MD Sampling Point: 1
Applicant/Owner:	State. 741. Samping Form.
Investigator(s): M. KLEBASKO, K. WALLS Section, To	vnship, Range:
Landform (hillstope, terrace, etc.): Woo DED DEPRESSION Local relief	
Subregion (LRR or MLRA): 149 A Lat:	Long: Dalum:
Soil Map Unit Name: ANNAPOLUS LOAMY SAUD (AOC	NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes	No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed?	Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling	g point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No Le th	
About Soil Descents	e Sampled Area in a Wetland? Yes X No
Wetland Hydrology Present? Yes X No with	in a Wetland? Yes No
Remarks:	
1	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Marl Deposits (B15) (LRR U)	Drainage Patterns (B10)
Saturation (A3) Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Water Marks (B1) X Oxidized Rhizospheres along I	
Sediment Deposits (B2) Presence of Reduced Iron (C4 Drift Deposits (B3) Recent Iron Reduction in Tilled	,
Algal Mat or Crust (B4) Thin Muck Surface (C7)	Geomorphic Position (D2)
Iron Deposits (B5) Other (Explain in Remarks)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)
★ Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes NoX Depth (inches):	
Saturation Present? Yes No X Depth (inches):	Wetland Hydrology Present? Yes X No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous	inspections), if available:
Describe Meadless Para (Sustain Sange, Mental Sustain	
Remarks:	
	ļ
	,
	,

/EGETATION (Five Strata) – Use scientific na	mes of plants.	Sampling Point:
	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover Species? Status	Number of Dominant Species
1 QUERCUS PALUSTRIS	15 N FW	That Are OBL, FACW, or FAC: (A)
	60 Y F	Total Number of Dominant
3. LIQUIDAMBAR STRACIFLUA		Species Across All Strata: (B)
4 ILLY OPACA	3 N FU	Percent of Dominant Species
5.		Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6		Prevalence Index worksheet:
. 9	123 = Total Cover	Total % Cover of: Multiply by:
50% of total cover:	5 20% of total cover: 24.6	OBL species x1 =
Sapling Stratum (Plot size:)	l., \/ [=	FACW species x 2 =
1. ACER NEGUNDO	10 Y F	FAC species x3 =
2.		FACU species x 4 =
3.		UPL species x 5 =
4.		Column Totals: (A) (B)
5		Column Totals.
6.		Prevalence Index = B/A =
	= Total Cover	Hydrophytic Vegetation Indicators:
	20% of total cover:	1 - Rapid Test for Hydrophylic Vegetation
Shrub Stratum (Plot size:)		2 - Dominance Test is >50%
		3 - Prevalence Index is ≤3.0¹
2. NA		Problematic Hydrophytic Vegetation¹ (Explain)
3.		
4.		Indicators of hydric soil and wetland hydrology must
5		be present, unless disturbed or problematic.
6.		Definitions of Five Vegetation Strata:
Y/	= Total Cover	Tree - Woody plants, excluding woody vines,
	20% of total cover:	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Herb Stratum (Plot size:)	70 Y F	
1. SMILLY ROTUNDIFOLIA		Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
2.		than 3 ln. (7.6 cm) DBH.
3.		Shrub - Woody plants, excluding woody vines,
4		approximately 3 to 20 ft (1 to 6 m) in height.
5		Herb - All herbaceous (non-woody) plants, including
6		herbaceous vines, regardless of size, and woody
7		plants, except woody vines, less than approximately 3 ft (1 m) in height.
8		
9		Woody vine - All woody vines, regardless of height.
10.		
11	= Total Cover	
50% of total cover	20% of total cover:	
Woody Vine Stratum (Plot size:)	2070 07 (0.00) 00701.	·
1. SMILAX ROTUNDIFOLIA	7 V F	
2.		
3	·	
4.		
5.		Hydrophytic
V	= Total Cover	1 Manual of the second of the
50% of total cover	20% of total cover:	Present? Yes No No
Remarks: (If observed, list morphological adaptations be		
Trontains. (II apported) has the knowledge adaptations be	·-··/·	

Sampling Point:

Depth <u>Matrix</u>	Redox Features	_ ,
(inches) Color (moist) %	Color (moist) '% Type¹ Loc²	4
0-3 104R3/1		LOAM
3-10 2.5741a		LOAM
10-16 2.54512	1042414 30	Loam
10 18 11.51		
	TO THE RESIDENCE AND THE PROPERTY OF THE PROPE	
¹Type: C=Concentration, D=Depletion, RM=F	Reduced Matrix. MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soll Indicators: (Applicable to all L		indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Polyvalue Below Surface (S8) (LRR S, T,	-
Histic Epipedon (A2)	Thin Dark Surface (S9) (LRR S, T, U)	2 cm Muck (A10) (LRR S)
Black Histic (A3)	Loamy Mucky Mineral (F1) (LRR O)	Reduced Vertic (F18) (outside MLRA 150A,B)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19) (LRR P, S, T)
Stratified Layers (A5)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)
Organic Bodies (A6) (LRR P, T, U)	Redox Dark Surface (F6)	(MLRA 153B)
5 cm Mucky Mineral (A7) (LRR P, T, U)	Depleted Dark Surface (F7)	Red Parent Material (TF2)
Muck Presence (A8) (LRR U)	Redox Depressions (F8)	Very Shallow Dark Surface (TF12)
1 cm Muck (A9) (LRR P, T)	Mari (F10) (LRR U)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) Thick Dark Surface (A12)	Depleted Ochric (F11) (MLRA 151) iron-Manganese Masses (F12) (LRR O, P	P, T) ⁹ Indicators of hydrophytic vegetation and
Coast Prairie Redox (A16) (MLRA 150A)		wetland hydrology must be present.
Sandy Mucky Mineral (S1) (LRR O, S)	Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.
Sandy Gleyed Matrix (S4)	Reduced Vertic (F18) (MLRA 150A, 150B	•
Sandy Redox (S5)	Piedmont Floodplain Soils (F19) (MLRA 1	
Stripped Matrix (S6)	Anomalous Bright Loamy Solls (F20) (MLI	•
Dark Surface (S7) (LRR P, S, T, U)		
Restrictive Layer (if observed):		
Туре:		
		Hydric Soil Present? Yes No
Туре:		Hydric Soil Present? Yes X No
Type:		Hydric Soil Present? Yes X No
Type:		Hydric Soil Present? Yes X No
Type:		Hydric Soil Present? Yes K No No
Type:		Hydric Soil Present? Yes No
Type:		Hydric Soll Present? Yes No
Type:		Hydric Soil Present? Yes No
Type:		Hydric Soll Present? Yes No
Type:	· · · · · · · · · · · · · · · · · · ·	Hydric Soll Present? Yes No
Type:	·	Hydric Soll Present? Yes No
Type:		Hydric Soll Present? Yes K No
Type:		Hydric Soll Present? Yes K No No
Type:		Hydric Soll Present? Yes X No
Type:		Hydric Soll Present? Yes No
Type:		Hydric Soll Present? Yes No
Type:		Hydric Soll Present? Yes No
Type:		Hydric Soil Present? Yes X No
Type:		Hydric Soil Present? Yes X No
Type:		Hydric Soil Present? Yes X No
Type:		Hydric Soil Present? Yes X No
Type:		Hydric Soil Present? Yes X No No
Type:		Hydric Soil Present? Yes X No No
Type:		Hydric Soll Present? Yes No
Type:		Hydric Soil Present? Yes X No No

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region Project/Site: ANNAPOLIS NECK, LLC City/County: ANNAPOLIS / A.A. Sampling Date: 10 | 5 | 12 |

Applicant/Owner: State: MD Sampling Point: 2 investigator(s): M. KLEBIKSKO, K. WALUS Section, Township, Range: Landform (hillstope, terrace, etc.): GENTLE SLOPE Local relief (concave, convex, none): CONCINIE Slope (%): <5 Subregion (LRR or MLRA): 149 A Lat: _____ ____ Long: _____ NWI classification: ___ Soil Map Unit Name: ANNAPULS LOAMY SAND Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.) Are "Normal Circumstances" present? Yes X No _____ Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? (If needed, explain any answers in Remarks.) Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? is the Sampled Area Hydric Soil Present? within a Wetland? Wetland Hydrology Present? Remarks: HYDROLOGY Secondary Indicators (minimum of two required) Wetland Hydrology Indicators: Surface Soil Cracks (B6) Primary Indicators (minimum of one is required; check all that apply) ___ Sparsely Vegetated Concave Surface (B8) ___ Surface Water (A1) ___ Aquatic Fauna (B13) ___ Drainage Patterns (B10) ___ Mart Deposits (B15) (LRR U) ___ High Water Table (A2) Moss Trim Lines (B16) ___ Saturation (A3) ___ Hydrogen Sulfide Odor (C1) ___ Oxidized Rhizospheres along Living Roots (C3) ___ Dry-Season Water Table (C2) __ Water Marks (B1) ___ Presence of Reduced Iron (C4) ___ Crayfish Burrows (C8) ___ Sediment Deposits (B2) ___ Saturation Visible on Aerial Imagery (C9) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3) ___ Geomorphic Position (D2) ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4) __ Shallow Aquitard (D3) ___ fron Deposits (B5) ___ Other (Explain in Remarks) ___ FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Sphagnum moss (D8) (LRR T, U) Water-Stained Leaves (B9) Field Observations: Yes No Depth (inches):
Yes No Depth (inches):
Yes No Depth (inches): Surface Water Present? Water Table Present? Wetland Hydrology Present? Yes _____ No ____ Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:

EGETATION (Five Strata) — (Cae solentino no				Sampling	,,	***********
HERMONE, HARMAN, HELM			Dominant		Dominance Test worksheet:	_	
<u>ree Stratum</u> (Plot size:			Species?		Number of Dominant Species That Are OBL, FACW, or FAC:	<u> </u>	(A)
NONE					Total Number of Dominant Species Across All Strata:	0	(B)
					Percent of Dominant Species	\circ	
i,					That Are OBL, FACW, or FAC: _		_ (A/B
)	A				Prevalence Index worksheet:		
			= Total Cov		Total % Cover of:	Multiply by:	
50%	of total cover:	20% of	total cover		OBL species x1		
Sapling Stratum (Plot size:)				FACW species x 2		
•				**************************************	FAC species x 3		
					FACU species x 4		
NONE			***************************************	 	UPL species x 5		
	MONONEO - LA MONO MONONEO -				Column Totals: (A)		
j							
			= Total Cov		Prevalence Index = B/A =		
E00/	of total cover:				Hydrophytic Vegetation Indicate 1 - Rapid Test for Hydrophytic		
Shrub Stratum (Plot size:		20 /0 00	LUIZI OUYGI	*	2 - Dominance Test is >50%	. Aeforation	
1.					2 - Dominance Test is >30% 3 - Prevalence Index is ≤3.0¹		
					Problematic Hydrophytic Vege	etation ¹ (Expl	ein)
					Problemanc Hydrophyno vogo	MUNION (EMPIR	u,
	, , , , , , , , , , , , , , , , , , ,				Indicators of hydric soil and wetla	ad hydrology	muet
4. <u> </u>					be present, unless disturbed or pre	oblematic.	must
5					Definitions of Five Vegetation S		
6			= Total Co	ver		and Udnac	
	6 of total cover:				Tree - Woody plants, excluding w approximately 20 ft (6 m) or more (7.6 cm) or larger in diameter at bi	in height and	3 in. DBH).
Herb Stratum (Plot size:		_60	Y	PU	Sapiling – Woody plants, excludin	a woody vine	
2. FESCUE (GRASS)			Ÿ	Fu	approximately 20 ft (6 m) or more	in height and	less
3. RUMER CAISPUS		- 5	N	FU	than 3 ln. (7.6 cm) DBH.		
4					Shrub - Woody plants, excluding approximately 3 to 20 ft (1 to 6 m)	woody vines, in height.	,
5	····						
6					Herb - All herbaceous (non-wood herbaceous vines, regardless of s	iy) plants, inci ize, and woor	luaing dy
7 8					plants, except woody vines, less t	han approxim	nately
9					, , ,	mardiana at h	aiahi
10					Woody vine - All woody vines, re	igaluless Ol II	eggit.
11							
			= Total Co				
509	% of total cover: <u>62</u>				_		
Woody Vine Stratum (Plot size:		- 					
1.					.		
2 NONE				_	.		
3.					_		
4.					•		
5.					- Hydrophytic		
			= Total Co	wer	lad dat	No X	
					Present? Yes	840 7.4	
509	% of total cover:	20% (of total cove	r:		.,	

		0
Sampling	Point:	

SOIL

Donth	mpttom (Boosins)	o the depth	needed to docum	ient the l	ndicator o	r confirm	n the absence of	maicators.)		- 1
Depth	Matrix			Feature:		1 4 - 2	Tautura	23	emarks	
(inches)	Color (molst)	<u> </u>	Color (moist)		Type ¹	Loc ²	Texture		Cital V2	
0-5	HANNIE HANNE			g	E-SCHOOL STATE OF THE SCHOOL STATE OF THE SCHO		LOAM		1/18/10/2000	
5-14	WWW.		104R 5/1	_5_	•		SAMO' CLAM	CONTV	MALESTA)	15)
	2.58913		1045A1P	_5_					POUS SEN	
									······	

- TA///4//		0,411		Mitter		Hard Association of the State o	103 , ,			
1- 0.5			3 - J J & J - J. J				21 acction: DI	.=Pore Lining	8.4-BActriv	
	oncentration, D=Depl Indicators: (Applica					1115.			: Hydric Solls ³ :	
Histoso		abio to dit ta	Polyvalue Be			RRSTI		k (A9) (LRR (_	
	pipedon (A2)		Thin Dark Su				,	k (A10) (LRR		
_	istic (A3)		Loamy Mucky				Reduced	Vertic (F18) (outside MLRA 15	
	en Suifide (A4)		Loamy Gleye		(F2)		Company		oils (F19) (LRR P,	S, T)
	d Layers (A5)	T 115	Depleted Mat		"G)			_	ny Soils (F20)	
	: Bodies (A6) (LRR P, ucky Mineral (A7) (LR		Redox Dark 5	-	-		(MLRA Red Pare	าองธ _ั nt Material (T	F2)	
ı —	resence (A8) (LRR U		Redox Depre					llow Dark Sur		
	uck (A9) (LRR P, T)	•	Marl (F10) (L	•	•			plain in Rema		
Deplete	d Below Dark Surface	(A11)	Depleted Oct		-	-		e	. 41	.
	ark Surface (A12)		Iron-Mangan						ytic vegetation an	a
	rairie Redox (A16) (N Mucky Mineral (S1) (L		Umbric Surfa Delta Ochric			Uj		a nyarology n disturbed or	nust be present, problematic.	
	Sleyed Matrix (S4)	.KK 0, 0)	Reduced Ver			0A, 150B		. 6,5,6,6,6	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	Redox (S5)		Pledmont Flo	odplain S	ioils (F19)	(MLRA 1	49A)			į
	d Matrix (S6)		Anomalous B	right Loa	my Solls (I	20) (MLF	RA 149A, 153C, 1	53D)		
	ırface (S7) (LRR P, S Layer (if observed):									
	Layer (II observed):									
Type:	iches):						i		s No	(
Remarks:	10:103).						Hydric Soil Pr	esent? Ye:	ร ทบ-	
Keiliaiks.							Hydric Soll Pr	esent? Ye	s No	
							Hydric Soli Pr	esent? Ye	S NU	
							Hydric Soli Pr	esent? Ye	S NU	
							Hydric Soli Pr	esent? Ye	SNU	
							Hydric Soli Pr	BSBM(YE	SNU	
							Hydric Soli Pr	BSBM(YB:	SNU	
							Hydric Soli Pr	858M(SNU	
				·			Hydric Soli Pr	BSBM(YB:	SNU	
							Hydric Soli Pr	858M(SNU	
							Hydric Soli Pr	858M(SNU	
							Hydric Soli Pr	959T(SNU	
				·			Hydric Soli Pr	959M(SNU	
							Hydric Soli Pr	858M(S NU	
							Hydric Soli Pr	959T(S NU	
							Hydric Soli Pr	959T(SNU	
							Hydric Soli Pr	959M(SNU	
							Hydric Soli Pr	959M(SNU	
							Hydric Soli Pr	959M(SNU	
							Hydric Soli Pr	959T(S NU	
							Hydric Soli Pr	959T(SNU	
							Hydric Soli Pr	959T(SNU	
							Hydric Soli Pr	959M(SNU	

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Applicant/Owner:	relief (concave, convex, none): CONCAVE Slope (%): Slope (%):
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks:	Is the Sampled Area within a Wetland? Yes NoX
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) High Water Table (A2) Marl Deposits (B15) (LR Saturation (A3) Hydrogen Sulfide Odor (Water Marks (B1) Oxidized Rhizospheres at Presence of Reduced Inc. Sediment Deposits (B2) Presence of Reduced Inc. Drift Deposits (B3) Recent Iron Reduction in Thin Muck Surface (C7) Iron Deposits (B5) Other (Explain in Remark Inc. Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)	C1)
Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, presents:	Wetland Hydrology Present? Yes No X

/EGETATION (Five Strata) - Use scientific nam	nes of pla	ants.		Sam	pling Point: _	3
	Absolute	Dominant	Indicator	Dominance Test worksheet:		
	% Cover 25	Species?	Status FAC	Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
1. ACER RUBRUM			VPL	11101740 0.02,171007, 0.710		
2. QUERCUS MONTANA. 3.			VYES	Total Number of Dominant Species Across All Strata:	1	(B)
			,	·		
5.				Percent of Dominant Species That Are OBL, FACW, or FAC:	14	(A/B)
6.				Prevalence Index worksheet:		CONTRACTOR OF THE PARTY OF THE
		= Total Co	ı	Total % Cover of:	Multiply by	<u>v:</u>
50% of total cover:	20% of	f total cover	ř	OBL species		
Sapling Stratum (Plot size:)	HO)	Y	FACU	FACW species	x 2 =	
1. PRUNUS SERDTINA		N	UOL	FAC species	x 3 =	
2. CANYA TOMENTOSA		- N	FAC	FACU species		
3. ILEX OPACA		10	rr.	UPL species		
4.				Column Totals:		
5						
6.	50	= Total Co		Prevalence Index = B/A	The second second second	
7 E				Hydrophytic Vegetation Indi		
50% of total cover: <u>25</u>	20% o	f total cove	r: <u>10</u>	1 - Rapid Test for Hydroph		ON
Shrub Stratum (Plot size:)	2	V	FACU	2 - Dominance Test is >50		
1. VIBURNUM PRUNIFOLIUM				3 - Prevalence Index is ≤3		
2 LIGUSTRUM VULGARE	_5_	<u> </u>	FACU	Problematic Hydrophytic \	/egetation (E	xplain)
3.						
4				Indicators of hydric soil and w	etland hydrolo	ogy must
5.			- 	be present, unless disturbed o		<u>. </u>
6.	15-dd			Definitions of Five Vegetation	n Strata:	
		= Total Co	ver	Tree - Woody plants, excludir	ig woody vine	s,
50% of total cover: 3.5 Herb Stratum (Plot size:)	20% o	f total cove	r: <u>1.14</u>	approximately 20 ft (6 m) or m (7.6 cm) or larger in diameter (ore in height s	and 3 ln.
1.				Sapting - Woody plants, exclu	iding woody v	ines,
2. N/A				approximately 20 ft (6 m) or m than 3 in. (7.6 cm) DBH.	ore in height a	and less
3.					والمراجع والمساور والمال	
4.				Shrub – Woody plants, exclude approximately 3 to 20 ft (1 to 6	ing woody vii Sm) in height.	105,
5				Herb - All herbaceous (non-w	oody) plants.	includina
6				herbaceous vines, regardless	of size, and w	roody
7.				plants, except woody vines, le 3 ft (1 m) in height.	ss than appro	ximately
8			- 	1 ' '		
9.				Woody vine - All woody vine	s, regardless	of height.
10						
11		= Total Co				
50% of total cover:	20% (_ = Total Cove				
Woody Vine Stratum (Plot size:)	_	,	~ 1 a. 1			
1. HEDENA HELIK	90	<u> </u>	FACU	•		
2 PARTHENOGISSUS QUINQUEFOLIA	30	<u> Y</u>	FACU			
3 TUXICODENDRUM RADICAUS	10	<u>N</u>	FAC			
4. LOUICEMA SHOUNCE	10	N	FACU			
4. <u>LVOISE</u> 304 300 5.				Hydrophytic		
	140	_ = Total C	over	Vegetation	No X	
50% of total cover: <u>10</u>	20%	of total cove	er: <u>28</u>	Present? Yes	No <u>^</u>	
Descriptions have a second of the morphological adaptations have			***************************************			

Sampling Point: 3

Depth (inches)	Matrix Color (moist) %	Redox Features Color (moist) '% Type¹ Loc²	Texture Remarks
0-3	10405/2		LOAM
3-5	1042413		LOAM
	2.5Y 5/3		LOAM
5-8		3/1/da 10	LOAM
8-13	2.54713	<u>a.sys13 10</u>	
<u> </u>	CONTRACTOR OF THE PARTY OF THE		
		page 1	
		Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soll	Indicators: (Applicable to all	LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Solis ³ :
Histosol	• •	Polyvalue Below Surface (S8) (LRR S, T	(U) 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S)
	oipedon (A2) istic (A3)	Thin Dark Surface (S9) (LRR S, T, U) Loamy Mucky Mineral (F1) (LRR O)	Reduced Vertic (F18) (outside MLRA 150A,B)
	en Sulfide (A4)	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19) (LRR P, S, T)
	Layers (A5)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)
	Bodies (A6) (LRR P, T, U)	Redox Dark Surface (F6)	(MLRA 153B)
	icky Mineral (A7) (LRR P, T, U)	Depleted Dark Surface (F7) Redox Depressions (F8)	Red Parent Material (TF2) Very Shallow Dark Surface (TF12)
	resence (A8) (LRR U) Ick (A9) (LRR P, T)	Redox Depressions (F6)	Other (Explain in Remarks)
	d Below Dark Surface (A11)	Depleted Ochric (F11) (MLRA 151)	_
	ark Surface (A12)	iron-Manganese Masses (F12) (LRR O,	
:	rairie Redox (A16) (MLRA 150/	· · · · · · · · · · · · · · · · · · ·	wetland hydrology must be present, unless disturbed or problematic.
	Mucky Mineral (S1) (LRR O, S) Bleyed Matrix (S4)	Delta Ochric (F17) (MLRA 151) Reduced Vertic (F18) (MLRA 150A, 150	•
	Redox (S5)	Piedmont Floodplain Soils (F19) (MLRA	
	l Matrix (S6)	Anomalous Bright Loamy Soils (F20) (MI	LRA 149A, 153C, 153D)
	rface (S7) (LRR P, S, T, U)		
_	Layer (If observed):		
Type:			Hydric Soil Present? Yes No
Type: Depth (in	Layer (If observed):		Hydric Soll Present? Yes No
Type:			Hydric Soil Present? Yes No _X
Type: Depth (in			Hydric Soll Present? Yes No X
Type: Depth (in			Hydric Soil Present? Yes NoX
Type: Depth (in			Hydric Soll Present? Yes NoX
Type: Depth (in			Hydric Soll Present? Yes NoX
Type: Depth (in			Hydric Soll Present? Yes No X
Type: Depth (in		· · · · · · · · · · · · · · · · · · ·	Hydric Soll Present? Yes No X
Type: Depth (in			Hydric Soll Present? Yes No _X
Type: Depth (in			Hydric Soll Present? Yes No X
Type: Depth (in			Hydric Soll Present? Yes No X
Type: Depth (in			Hydric Soll Present? Yes No X
Type: Depth (in			Hydric Soll Present? Yes No _X
Type: Depth (in			Hydric Soll Present? Yes No X
Type: Depth (in			Hydric Soll Present? Yes No X
Type: Depth (in			Hydric Soll Present? Yes No X
Type: Depth (in			Hydric Soil Present? Yes No X
Type: Depth (in			Hydric Soll Present? Yes No
Type: Depth (in			Hydric Soll Present? Yes No X
Type: Depth (in			Hydric Soll Present? Yes No X
Type: Depth (in			Hydric Soil Present? Yes No X
Type: Depth (in			Hydric Soil Present? Yes No